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RAW SEQUENCE LISTING

DATE: 11/21/2002

PATENT APPLICATION: US/09/842,484A

TIME: 11:43:13

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Output Set: N:\CRF4\11212002\I842484A.raw

SAME

3 <110> APPLICANT: DEANGELIS, PAUL L.
5 <120> TITLE OF INVENTION: CHONDROITIN SYNTHASE GENE AND METHODS OF MAKING AND USING

7 <130> FILE REFERENCE: 4605.003
9 <140> CURRENT APPLICATION NUMBER: 09/842,484A
10 <141> CURRENT FILING DATE: 2001-04-25
12 <150> PRIOR APPLICATION NUMBER: 60/199,538
13 <151> PRIOR FILING DATE: 2000-04-25
15 <160> NUMBER OF SEQ ID NOS: 7
17 <170> SOFTWARE: PatentIn version 3.1

19 <210> SEQ ID NO: 1
20 <211> LENGTH: 2979
21 <212> TYPE: DNA
22 <213> ORGANISM: Pasteurella multocida
24 <400> SEQUENCE: 1

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126 <210> SEQ ID NO: 2

127 <211> LENGTH: 965

128 <212> TYPE: PRT

129 <213> ORGANISM: Pasteurella multocida

131 <400> SEQUENCE: 2

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138 20 25 30
141 Lys Ile Val Glu Phe Gln Ile Ile Lys Cys Lys Glu Lys Leu Ser Thr
142 35 40 45
145 Asn Ser Tyr Val Ser Glu Asp Lys Lys Asn Ser Val Cys Asp Ser Ser
146 50 55 60
149 Leu Asp Ile Ala Thr Gln Leu Leu Leu Ser Asn Val Lys Lys Leu Thr
150 65 70 75 80
153 Leu Ser Glu Ser Glu Lys Asn Ser Leu Lys Asn Lys Trp Lys Ser Ile
154 85 90 95
157 Thr Gly Lys Lys Ser Glu Asn Ala Glu Ile Arg Lys Val Glu Leu Val
158 100 105 110
161 Pro Lys Asp Phe Pro Lys Asp Leu Val Leu Ala Pro Leu Pro Asp His
162 115 120 125
165 Val Asn Asp Phe Thr Trp Tyr Lys Asn Arg Lys Lys Ser Leu Gly Ile
166 130 135 140
169 Lys Pro Val Asn Lys Asn Ile Gly Leu Ser Ile Ile Ile Pro Thr Phe
170 145 150 155 160
173 Asn Arg Ser Arg Ile Leu Asp Ile Thr Leu Ala Cys Leu Val Asn Gln
174 165 170 175
177 Lys Thr Asn Tyr Pro Phe Glu Val Val Val Ala Asp Asp Gly Ser Lys

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189	Asn Leu Gly	Leu Arg Thr Ala	Lys Tyr Asp Phe	Val Ser Ile	Leu Asp	
190	225		230		235	240
193	Cys Asp Met	Ala Pro Gln Gln	Leu Trp Val His	Ser Tyr Leu	Thr Glu	
194		245		250		255
197	Leu Leu Glu	Asp Asn Asp Ile	Val Leu Ile Gly	Pro Arg Lys	Tyr Val	
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201	Asp Thr His	Asn Ile Thr Ala	Glu Gln Phe Leu	Asn Asp Pro	Tyr Leu	
202		275		280		285
205	Ile Glu Ser	Leu Pro Glu Thr	Ala Thr Asn Asn	Asn Pro Ser	Ile Thr	
206		290		295		300
209	Ser Lys Gly	Asn Ile Ser Leu	Asp Trp Arg Leu	Glu His Phe	Lys Lys	
210	305		310		315	320
213	Thr Asp Asn	Leu Arg Leu Cys	Asp Ser Pro Phe	Arg Tyr Phe	Val Ala	
214		325		330		335
217	Gly Asn Val	Ala Phe Ser Lys	Glu Trp Leu Asn	Lys Val Gly	Trp Phe	
218		340		345		350
221	Asp Glu Glu	Phe Asn His Trp	Gly Gly Glu Asp	Val Glu Phe	Gly Tyr	
222		355		360		365
225	Arg Leu Phe	Ala Lys Gly Cys	Phe Phe Arg Val	Ile Asp Gly	Gly Met	
226		370		375		380
229	Ala Ile His	Gln Glu Pro Pro	Gly Lys Glu Asn	Glu Thr Glu	Arg Glu	
230	385		390		395	400
233	Ala Gly Lys	Ser Ile Thr Leu	Lys Ile Val Lys	Glu Lys Val	Pro Tyr	
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237	Ile Tyr Arg	Lys Leu Leu Pro	Ile Glu Asp Ser	His Ile His	Arg Ile	
238		420		425		430
241	Pro Leu Val	Ser Ile Tyr Ile	Pro Ala Tyr Asn	Cys Ala Asn	Tyr Ile	
242		435		440		445
245	Gln Arg Cys	Val Asp Ser Ala	Leu Asn Gln Thr	Val Val Asp	Leu Glu	
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249	Val Cys Ile	Cys Asn Asp Gly	Ser Thr Asp Asn	Thr Leu Glu	Val Ile	
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253	Asn Lys Leu	Tyr Gly Asn Asn	Pro Arg Val Arg	Ile Met Ser	Lys Pro	
254		485		490		495
257	Asn Gly Gly	Ile Ala Ser Ala	Ser Asn Ala Ala	Val Ser Phe	Ala Lys	
258		500		505		510
261	Gly Tyr Tyr	Ile Gly Gln Leu	Asp Ser Asp Asp	Tyr Leu Glu	Pro Asp	
262		515		520		525
265	Ala Val Glu	Leu Cys Leu Lys	Glu Phe Leu Lys	Asp Lys Thr	Leu Ala	
266		530		535		540
269	Cys Val Tyr	Thr Thr Asn Arg	Asn Val Asn Pro	Asp Gly Ser	Leu Ile	
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273	Ala Asn Gly	Tyr Asn Trp Pro	Glu Phe Ser Arg	Glu Lys Leu	Thr Thr	
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285 Met Phe Leu Lys Leu Ser Glu Val Gly Lys Phe Lys His Leu Asn Lys
286      610      615      620
289 Ile Cys Tyr Asn Arg Val Leu His Gly Asp Asn Thr Ser Ile Lys Lys
290 625      630      635      640
293 Leu Gly Ile Gln Lys Lys Asn His Phe Val Val Val Asn Gln Ser Leu
294      645      650      655
297 Asn Arg Gln Gly Ile Asn Tyr Tyr Asn Tyr Asp Lys Phe Asp Asp Leu
298      660      665      670
301 Asp Glu Ser Arg Lys Tyr Ile Phe Asn Lys Thr Ala Glu Tyr Gln Glu
302      675      680      685
305 Glu Met Asp Met Leu Lys Asp Leu Lys Leu Ile Gln Asn Lys Asp Ala
306      690      695      700
309 Lys Ile Ala Val Ser Ile Phe Tyr Pro Asn Thr Leu Asn Gly Leu Val
310 705      710      715      720
313 Lys Lys Leu Asn Asn Ile Ile Glu Tyr Asn Lys Asn Ile Phe Val Ile
314      725      730      735
317 Ile Leu His Val Asp Lys Asn His Leu Thr Pro Asp Ile Lys Lys Glu
318      740      745      750
321 Ile Leu Ala Phe Tyr His Lys His Gln Val Asn Ile Leu Leu Asn Asn
322      755      760      765
325 Asp Ile Ser Tyr Tyr Thr Ser Asn Arg Leu Ile Lys Thr Glu Ala His
326      770      775      780
329 Leu Ser Asn Ile Asn Lys Leu Ser Gln Leu Asn Leu Asn Cys Glu Tyr
330 785      790      795      800
333 Ile Ile Phe Asp Asn His Asp Ser Leu Phe Val Lys Asn Asp Ser Tyr
334      805      810      815
337 Ala Tyr Met Lys Lys Tyr Asp Val Gly Met Asn Phe Ser Ala Leu Thr
338      820      825      830
341 His Asp Trp Ile Glu Lys Ile Asn Ala His Pro Pro Phe Lys Lys Leu
342      835      840      845
345 Ile Lys Thr Tyr Phe Asn Asp Asn Asp Leu Arg Ser Met Asn Val Lys
346      850      855      860
349 Gly Ala Ser Gln Gly Met Phe Met Lys Tyr Ala Leu Pro His Glu Leu
350 865      870      875      880
353 Leu Thr Ile Ile Lys Glu Val Ile Thr Ser Cys Gln Ser Ile Asp Ser
354      885      890      895
357 Val Pro Glu Tyr Asn Thr Glu Asp Ile Trp Phe Gln Phe Ala Leu Leu
358      900      905      910
361 Ile Leu Glu Lys Lys Thr Gly His Val Phe Asn Lys Thr Ser Thr Leu
362      915      920      925
365 Thr Tyr Met Pro Trp Glu Arg Lys Leu Gln Trp Thr Asn Glu Gln Ile
366      930      935      940
369 Gln Ser Ala Lys Lys Gly Glu Asn Ile Pro Val Asn Lys Phe Ile Ile
370 945      950      955      960
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